

James Turrell Light & Space

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An Exhibition Organized by Barbara Haskell

Introduction by Melinda Wortz

Commentaries by James Turrell

Whitney Museum of American Art, New York

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Foreword

Among the many significant events distinguishing the 50th Anniversary of the Whitney Museum of American Art, perhaps the most gratifying to those of us closely associated with the Museum is the Jim Turrell exhibition, which reaffirms our commitment to contemporary American artists. We have chosen to include this exhibition as part of the 50th Anniversary celebration because of the innovative character of Turrell's work. His statement is unique. Its importance lies in the way in which he uses the natural elements of the environment, light and space, to challenge our visual perceptions. As with many artists of our time, his work is better known outside the United States than it is to us. Turrell has never been given a comprehensive exhibition in New York City and his work is virtually unknown to the general public.

We are indebted to the artist, who has been extremely cooperative and drawn us all into the process of his work, and to Melinda Wortz, whose introductory essay to the

catalogue extends the understanding of Turrell's work to the public.

It may seem farfetched, but it is fascinating to contemplate the parallels between Edward Hopper and Jim Turrell, whose works are concurrently on view in the Museum. Both are concerned with the mysteries of light, the elegance of space, and the bewildering situation that each of us confronts in our daily encounter with these aspects of nature.

Other 50th Anniversary exhibitions have primarily reflected the past accomplishments and growth of the Museum. This exhibition signifies the emergence of the Museum into the future through our loyalty to contemporary artists and our commitment to the proper presentation of their work.

Tom Armstrong
Director

Introduction

Perhaps the most pervasive characteristic of twentieth-century thought and experience has been a disruption of absolute concepts and the consequent need to confront the uncertainty of existence. In virtually all areas of human experience, from science to religion, from the family to the state, psychology to ecology, we have seen traditional structures break down without the establishment of a new order. In fact, through models of the universe as diverse as those portrayed in the new physics and Eastern mysticism, we have come to understand the nature of existence as ephemeral—relative to time, place and mind-set—and in a continuous process of interchange between what we can variously call matter and energy, form and emptiness, or observer and observed. The physicist Bernard d'Espagnat recently noted that the attitude of the experimenter influences not only the outcome of the experiment, but also, in some cases, the physical behavior of the particles involved.¹ In other circles these occurrences would be called parapsychological, and thus highly suspect to hard science. For centuries the Hindus have referred to the essence of our lives and the physical world as *maya* (illusion), pointing to the ephemeral or unfixed conditions of existence. With admirable succinctness, the Buddhist Heart Sutra expresses the simultaneous interchangeability of concepts or experiences that are in polar opposition: "Form is emptiness, emptiness is form."

If we are really to come to terms with these views of the world—that nothing we know is permanent, that all exists only in shifting relationships with everything else—we have little to fall back on except ourselves, our own processes of being. Without the comfort of fixed concepts regarding what is good or bad, true or false, real or illusory, how can we proceed in life? It is exactly this confrontation with chaos which Morse Peckham has suggested should be a determining criterion in judging the validity of contemporary art.² With so much chaos in the world, it is not accidental that the best artists continue to present us with perceptual unknowns. Whether this new aesthetic vision reflects or predicts the insights of other disciplines is an unanswered question, but invariably art does embody the world views of the historical period in which it is produced.

James Turrell uses the properties of the environment, specifically light and space, to effect a disorientation of our customary experience of seeing the world. In this exhibition he employs two different formats—two rooms with light projections and two with Space Division Constructions—to create the illusion that we are seeing particular entities when in fact "nothing" is actually present, at least that we can verify by touching, holding or measuring. For physicists, too, the actual nature of light is difficult to describe and measure. They can choose to describe it as a particle or as a wave, but not both at the same time. In

other words, how we perceive the world is largely determined by how we choose to approach it, a fact that Marcel Duchamp understood as well as the scientists.

Both Turrell's installations and the study of physics point toward the illusive manner in which we normally choose to perceive the world. Through the study of perspective we learn that our eyes create the illusion of things that are not physically present, such as the meeting of two parallel lines at a vanishing point, and that this perceptual experience can be translated into a conceptual, mathematical system. For hundreds of years, artists have employed systems of linear and atmospheric perspective to create the illusion of deep space on the flat surface of a canvas. And although depicting what looks like soft fur or shiny metal on canvas has been called realistic painting, in fact it is the height of trickery, asking us to believe we are seeing something which is not actually present. By contrast, the development of non-representational or non-objective art in the twentieth century has been predicated largely on the desire to free art from the need to create illusions of objects in the world, and let it exist on its own terms. We can logically argue that non-objective art is more "realistic" than representational painting because it does not pretend to be anything other than what it is.³

Turrell's use of illusionism differs from that of the traditional artist, who suggests the presence of recognizable forms which are not in fact there, such as a drop of water on a bunch of grapes or vast distance on a two-dimensional piece of canvas. Instead of using materials like paint and canvas or carved marble to create the illusion of

other objects, Turrell presents the materials that are present in any situation—light (even in darkness we see some light) and space. Rather than paint the illusion of light as it falls across the surface of objects, Turrell asks us to look at light in and of itself. This emphasis on the thing-in-itself, looking at what is actually present instead of illusions of other things, has affinities with the Minimal Art movement of the 1960s and 1970s. However, most Minimal artists disavowed illusionism in pursuit of the literal, while Turrell heartily embraces illusion as inherent in our perceptual process, even though we are largely unaware of the illusions we are continually creating. We think, for example, that we are perceiving solid objects when in fact all we ever see is light reflecting in different wavelengths from the surfaces of things.

When Turrell presents light without the context of an object, he allows us more direct access to understanding the illusory nature of perception. We see that his projections on the wall do not articulate the wall's surface. On the contrary, they act to deny the physicality of the wall as a boundary, creating instead the illusion of an object made of light, hovering in space, like some mysterious vision. Our persistence in identifying the light projection as substance, even when we know none is there, confirms the tenacity of our perceptual biases.

By carefully controlling the quality of light—fluorescent, tungsten and daylight in various combinations—that reflects from his Space Division Constructions, Turrell sets up the illusion of a visual screen through which we see into a space whose boundaries of walls and floor appear to

have dissolved. As a result, we seem to be looking into an atmosphere. In everyday life we virtually never have this perceptual experience unless we can look straight up into a cloudless sky, without seeing a horizon, or perhaps if we are lost in fog. But fog at least has some tactile qualities, feeling cold or wet to our skin, whereas Turrell's atmospheric illusions in the Space Division Constructions do not present us with tactile information, like the condensed moisture of the fog, to indicate that the particular substance we see within has any physical existence. We cannot verify this illusive visual phenomenon as palpably different from the space in which we are standing. If we reach into the recessed space in an attempt to touch the substance that we see within, we immediately realize that in a physical sense nothing is there. Yet the visual experience is vividly real. How can we reconcile what we are seeing—density, substance, fullness—with what our intellect tells us—that the space is empty, not full? Oriental mystics have less difficulty reconciling contradictory opposites. Indeed, a major goal of Zen training is to bring about a direct experience that fuses dualistic concepts such as form and emptiness:

The highest stage of Buddhist experience is reached when a man comes to realize that things are devoid of a self-substance [form] or that they are not after all final, irreducible realities. . . . Reality as it is, or Mind in itself, is also called the suchness (*tathatā*) or sameness (*samatā*) of things, as herein are unified all forms of antithesis [i.e., form and formlessness] which constitute our actual world of sense and logic.⁴

The effect of Turrell's art, like that of Buddhist teachings (or the new physics), is to provide us access to *extraordinary* planes of perception, or the *actual* essence of things, depending upon how we choose to interpret our experience. A sense of boundless, light-filled space, such as we encounter in Turrell's Space Division Constructions, has been the content described in ecstatic visions throughout history. As Turrell says:

Light is often seen as the bearer of revelation rather than the substance of the revelation. It is "something" that "illuminates" other "things." For example, we speak of hanging a show and then lighting it, revealing the persistence of the way we actually think about light. But light may just as well be the content, the "substance."⁵

Whether we are examining the experiential qualities of Turrell's light and space installations or the references to light in the context of mystical experiences as diverse as the visualizations practiced by Tibetan Buddhists or the blinding light which accompanied the conversion of St. Paul, we wonder if the perceived phenomena are physically present or self-created. Turrell asks the question, "Where does the light come from in the dream?" In any cognitive sense, the question is probably unanswerable. Scientific experiments have demonstrated that the cortical activity of the brain during visualizations or dreams, when the subject is presumed to be experiencing phenomena that are subjective rather than objective, is identical to the physiological responses to physical objects or events.⁶ The more we examine our own perceptual processes, as Turrell's art encourages us to do, the more we can under-

stand the mystical perspective that reality *is* illusion, or illusion reality. It is illusion in this sense that Turrell's art addresses. To use his words: "I like illusion when it is so convincing that we might as well see reality this way—I like to present to our belief system something that is convincing, that 'we know not to be.'"⁷

Turrell is clearly a pioneer among the several artists who have lived on the West Coast and have used light and space to create installations dealing with the illusory nature of perception, and the mysterious sensorial richness of "emptiness." His first exhibition was curated by John Coplans at the Pasadena Art Museum in 1967, and consisted of two Projection Pieces like those currently on exhibition at the Whitney Museum. As noted above, the effect of these works was to break down our perceptual distinctions between matter and energy or substance and emptiness. At that time, 1966–68, there were three other artists in Southern California—Larry Bell, Robert Irwin and Doug Wheeler—with similar concerns. Irwin's first series of discs, incorporating the shadows created by two lights directed on the disc from the ceiling and two from the floor, was first shown publicly in 1968, at the Pasadena Art Museum. Bell, Irwin and Wheeler created a visual synchronicity of thing and nothingness by manipulating the qualities of light and space in relation to objects. Turrell chose instead to present projected light alone as his medium.

During the years immediately following his Pasadena show, Turrell turned to the investigation of light and space in his empty studio on the corner of Hill and Main in Santa

Monica. During the 1970s a number of other Southern California artists—Maria Nordman, Eric Orr, DeWain Valentine and Hap Tivey—also produced works that used ambient light and space as the media of environmental installations. In the late 1960s, John Coplans described the real medium of artists working in this context as the viewer's perceptual process.⁸ While Turrell's work is related to this larger context, he is clearly one of the first to move in the direction of incorporating the light and space of the physical world directly into his art.

The California artists were not the only ones who were creating light environments during the sixties and seventies. New York artist Dan Flavin was using fluorescent lights, often in an environmental manner. But his work differs from that of the California artists interested in the exploration of light and space *per se* in his emphasis on the physicality of the light fixtures as objects. This approach contrasts strongly with the visual dissolution of physicality in the work of the California artists.

After Turrell's exhibition in Pasadena, he was invited to exhibit with the Pace Gallery in New York, a major coup for a young California artist after only one show. During the next few years, he stopped making Projection Pieces and began to use the space of the studio itself, and the ambient light and sound of the street corner where it was located, as the materials for his installations. He had finely ground optical glass fabricated for the windows, and with a series of carefully fitted shades and apertures created kinetic paintings of light and shadow. Entitled the *Mendota Stoppages*, their basic structure was the reflected geome-

try of the architecture onto which random movements of the cars and street lights were choreographed in a highly controlled manner. Much of the wonder this work evoked came through the viewers' heightened awareness of the perceptual richness that is present in any environment: the subtle softness and multiple shades of light and shadow, the musical tones and rhythms of street noise.

Turrell's site-specific installations were impractical for the Pace Gallery to exhibit. With the agreement of the gallery, he decided not to show his earlier Projection Pieces there. Fortunately, he has received commissions and support during the last decade from two of the major private patrons of contemporary art in the world: Count Dottore Giuseppe Panza di Biumo of Milan and the Dia Art Foundation in the United States. Panza has commissioned works by Robert Irwin, Bruce Nauman, Maria Nordman and Turrell (as well as many others) for his seventeenth-century villa in Varese, Italy, virtually the only place in the world where site-specific installations by these artists are currently maintained on a permanent basis.

The exposure of site-specific installations continues to be problematic within the art establishment, although various alternative spaces and university and college art galleries have attempted to fill the void during the last decade. It is encouraging now to see the Whitney Museum supporting this exhibition, as well as the Robert Irwin show in 1977, perhaps setting an example which other institutions will follow. The current exhibition is Turrell's first museum exposure in the United States since 1967, and only his fourth public exhibition here.

During the late sixties and early seventies, Turrell had virtually no financial support, although other artists, particularly Richard Diebenkorn, Sam Francis and Jasper Johns, provided important moral support. In 1970 Turrell was selected by Maurice Tuchman to participate in the Los Angeles County Museum of Art's Art and Technology Program. For several months he collaborated with Edward Wortz of Garrett Airesearch and Robert Irwin on a series of intense and intimate experimental explorations into the nature of perception. In conducting these experiments, they made use of technological resources such as the anechoic chamber at the University of California, Los Angeles, biofeedback devices to enhance the production of alpha brain-wave frequencies, and ganzfelds, originally used by perceptual psychologists to train pilots to orient themselves in heavy weather without reference to accustomed perceptual clues of the horizon. These activities tied in both to Turrell's undergraduate major in psychology and to his subsequent use of ganzfeld effects.

Turrell's avocation is flying small aircraft and buying and selling antique planes. He is fascinated by all aspects of flight, including space flight and flying dreams. He speaks of the blackness found by those who have flown to the outer limits of our atmosphere—where there is no air to be lit, so that a progressive darkening of color as one ascends away from the earth prevents us from perceiving the limitlessness of space. Phenomena such as these have partly influenced the artist's creation of sky pieces, openings in interior spaces to the outside. Two of these have

been completed at Villa Panza, and others are in execution. The blackness closing up space occurs in the night aspect of Panza's sky pieces. Turrell also likens this phenomenon to the change that takes place when he moves from instrument flight rules (IFR) to visual flight rules, at the moment on top, before breaking out of the IFR weather conditions. A "sun and moon viewing room" is in process at the Roden Crater, near Sedona, Arizona, thanks to the support of the Dia Art Foundation, which is dedicated to realizing visionary works of art that would not otherwise be produced, and subsequently maintaining them for the public. Another of the artist's sky pieces is being constructed at P.S. 1 in Long Island City, New York.

These sky pieces, like the Space Division Constructions in the Whitney exhibition, create the illusion of a skin or screen existing between the interior and exterior space, when in actuality we know that the two are continuous. Is this the illusionistic veil we put up between ourselves and the universe, which is often referred to in the Old and New Testaments? Can we penetrate this veil? When completed, Turrell envisions the Roden Crater creating an environment where one can "see that he's already in the cosmos, that he doesn't have to go out into it to experience it."⁹ He compares the crater project to Japanese gardens:

Of all the gardens in the Japanese culture, the kind that I like very much is the kind where you do not see the hand of man. There are the traditional rock gardens with the raked sand and rock, and then there are those where you can't tell they're man-made. That is very fas-

cinating to me, because you cannot tell where the piece of "art" ends. This is where the ego of the artist begins to dissolve into the grand scale of things, and there's no signature. This is the kind of effort I am seeking with Roden Crater—a piece that does not end. My other works were contained within a space, and as soon as you left the space, the thing was not occurring.¹⁰

The incorporation in art of a direct response to the perceptual phenomena of the universe is rare. Even though we assume that representational painting is based on direct observation of its subject, more often than not its presentation has more to do with learned convention—the Renaissance use of perspective, or the Baroque stage, for example—than with acute perception. Painting directly from nature is uncommon in the history of art, as most work is ultimately executed in the studio according to preconceived ideas. Artists who did work directly from nature include the American Luminist painters, whose depiction of light in the American landscape was symbolic of the presence of God in nature, and several nineteenth-century English and French painters: Constable, Turner, the Barbizon School artists, and the French Impressionists. The California artists who have sought to incorporate the light and space of the environment as their media, rather than translate them into paint, share the Impressionists' desire to make the visual sensations of light and color experienced out-of-doors the content of their work. Since artists invariably develop their aesthetic structures at least in part as a response to their environment, it is logical that the incorporation of light and space themselves would occur

in California, where the experience of light and space is more pervasive in everyday life than it is in New York and other major cities.

The art of light and space installations heightens our awareness of our own perceptual processes so that we can discover both the richness and the mystery of our self-created illusions. When light and space are presented to us, as in Turrell's art, in such a way that we see them without reference to objects or boundaries—the perceptual cues by which we have learned to orient ourselves—we must come to terms with uncertainty, that dominant characteristic of twentieth-century life. When we can experience disorientation in a non-threatening, sensorially enriching context such as art, we may find the means to deal more positively with unfamiliar situations in everyday life. In spiritual disciplines, a suspension of judgment and expectation is sought in order to encounter unity with the cosmos. In more secular contexts, mystical insights have often accompanied intense contemplation of nature, to which art that employs the light and space of the world is analogous. It is clear that this art can give us, in addition to aesthetic pleasure, direct and practical ways to understand and embrace some of the most profound and perplexing realms of our existence. For Turrell, a major motivation toward the art act is his desire to express the coexistence of the dream and the conscious, awake state.

Melinda Wortz

Notes

1. Bernard d'Espagnat, "The Quantum Theory and Reality," *Scientific American*, 241 (November 1979), pp. 158–81.
2. Morse Peckham, *Man's Rage for Chaos* (New York: Schocken Books, Inc., 1967), especially pp. 74–83.
3. In 1968 E. C. Goossen organized an exhibition based on this premise which he entitled "The Art of the Real." See *The Art of the Real*, exhibition catalogue (New York: The Museum of Modern Art, 1968).
4. Daisetz Teitano Suzuki, *Studies in the Lankavatara Sutra* (London: Routledge and Kegan Paul Ltd., 1930), pp. 98–99.
5. James Turrell, interview by Melinda Wortz, October 1979.
6. H. P. Roffwarg, et al., "Dream Imagery: Relationship to Rapid Eye Movements of Sleep," *Archives of General Psychiatry*, no. 7 (1962), pp. 235–58; and A. Richardson, *Mental Imagery* (New York: Springer Publishing Co., 1969), p. 31, quoted in Mike Samuels, M.D., and Nancy Samuels, *Seeing with the Mind's Eye: The History, Techniques and Uses of Visualization* (New York and Berkeley: Random House, Inc., and Bookworks, 1975), p. 57.
7. Turrell, interview by Wortz.
8. John Coplans, *Los Angeles 6*, exhibition catalogue (Vancouver, B.C.: The Vancouver Art Gallery, 1968), p. 9.
9. Quoted in *Sedona Life*, Sedona, Arizona, 4, no. 1 (1979), p. 20.
10. Ibid.



Afrum, 1967
Xenon light
Collection of Giuseppe Panza di Biumo, Varese, Italy

Projection Pieces

Cross Corner

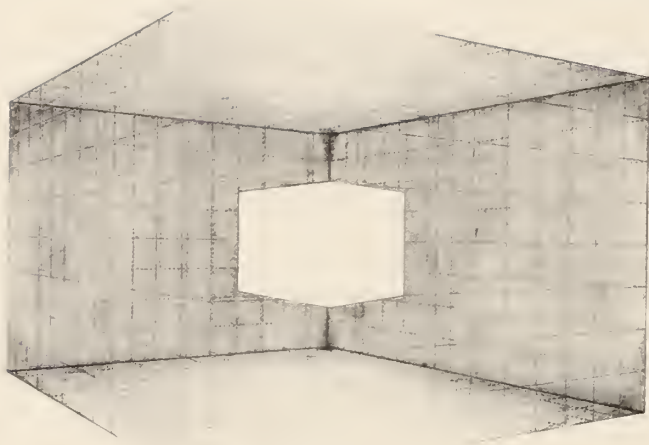
The earliest works began in 1966 and were formed by light projected on a wall surface from a slightly modified quartz-halogen projector. The first image was essentially a rectangle projected across a corner in such a way that from a distance there appeared to be a cube floating off the floor, yet in some manner attached to the corner of the space. From a distance this shape had solidity, but appeared to be literally composed of light. Still at a distance, but moving to the side, one could further substantiate this impression because the cube seemed to reveal itself in perspective. Advancing toward the image, the image would eventually dissolve to the point where you saw not the object in space, but the actual light on the wall.

The first images all had a distinctive sculptural quality: the piece seemed to objectify and make physically present light as a tangible material. The space which these pieces occupied was definitely not the same as that which the room had without the image. The space generated was analogous to a painting in two dimensions alluding to

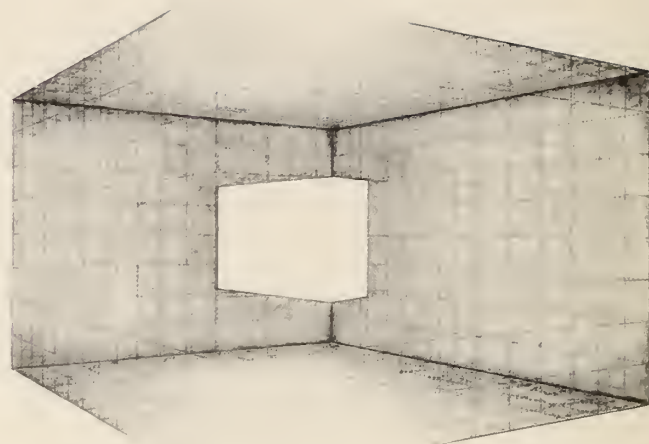
three dimensions, but in this case three-dimensional space was being used illusionistically. That is, the forms engendered through this quality of illusion did not necessarily resolve into one clearly definable form that would exist in three dimensions.

A series of similar cross-corner forms was then created, using xenon projectors constructed with the help of Leonard Pincus. Use of the xenon projectors allowed the size of the projections to be increased without any loss of brilliance. At the same time, crispness of focus was gained because the xenon source is a point source. Throughout the series, the image had a sense of solidity because in some manner a quality of transparency and surface had been created. To some degree the feeling of transparency and surface was unavoidable since the image was formed across a corner actually existing in three dimensions, and because any evenly lit shape of light projected on the wall cannot ride on exactly the same plane as the wall.

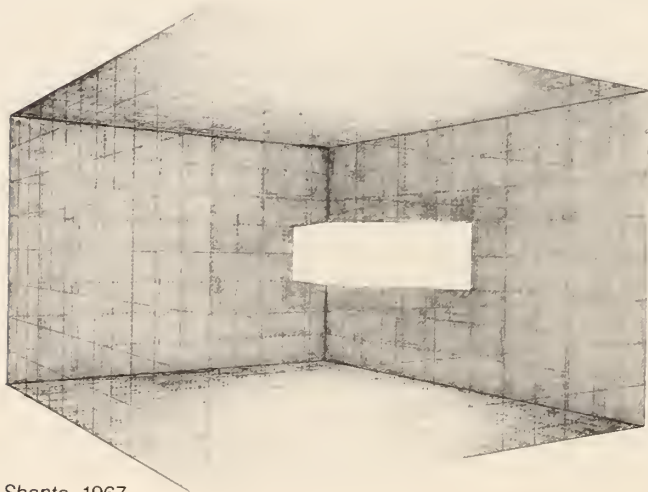
Cross Corner Projection Pieces



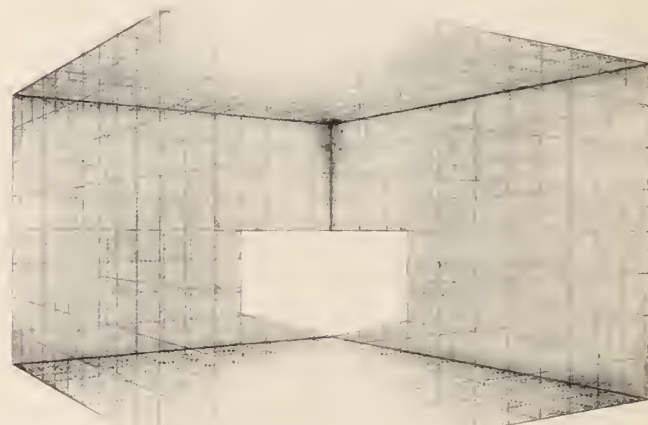
Afrum, 1967



Catso, 1967



Shanta, 1967



Munson, 1967

Projection Pieces

Single Wall

As the Projection series continued, most of the pieces were projected onto a single wall. The intensity of the images tended to dematerialize the wall surface so that it was perceived as a luminous rectangle. In some instances, this rectangle of light was seen as a non-dimensionally thin sheet of light that existed several inches in front of the wall surface; in other cases the image appeared as if you were looking into an indeterminate space that went through the wall. Each of these pieces dealt with the entire wall surrounding the image in such a way that the wall itself tended to function as the traditional "painting support."

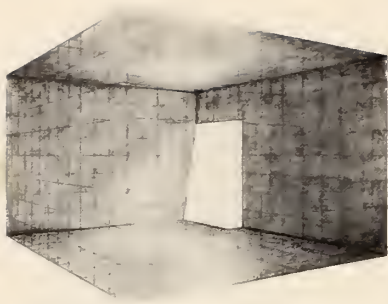
These simple rectilinear images were usually placed slightly above floor level, resting on the floor level, crisply

abutting the angle of an adjoining wall, or in combinations of these junctures. These pieces tended to modify the perception of the fixed position of the walls. In each piece, the qualities of change in the physical limits of the gallery depended on your distance from the image and whether you looked at it straight on or from the side. All of these pieces existed at the limits or very slightly inside the limits of the physical space. They affected the viewer's awareness of the space and tended to create a hypothetical or imaginary space within the gallery that could be dissolved on approaching the image.

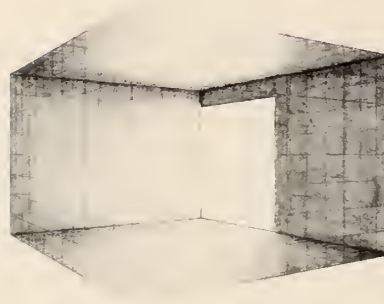
In all the Projection Pieces, it was important that the quality of illusion be both convincing and dissoluble.

Unless otherwise noted, all shaded drawings are graphite on paper, 43 x 50 cm (17 x 19½"), and all line drawings are graphite on paper, 27.7 x 21.5 cm (11 x 8½"). All are in private collections.

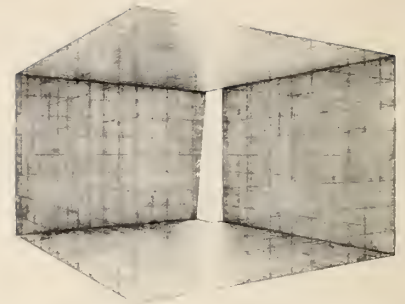
Single Wall Projection Pieces



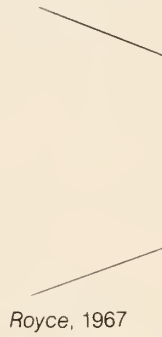
Juke, 1967



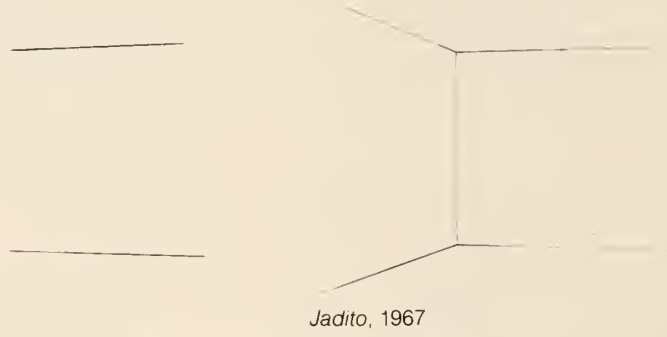
Fargo, 1967



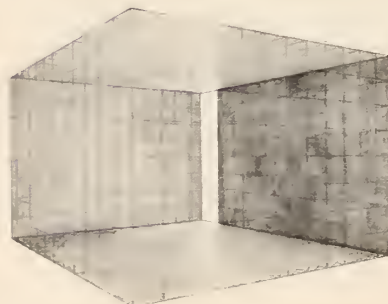
Endu, 1967



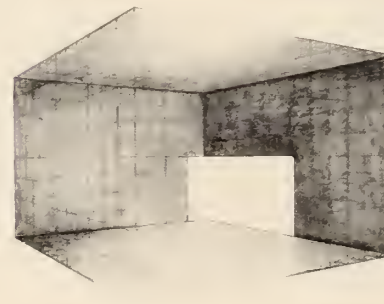
Royce, 1967



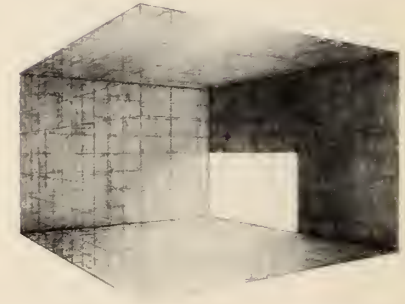
Jadito, 1967



Tollyn, 1967

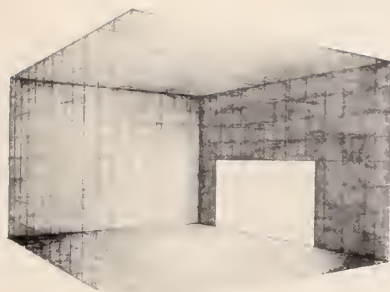


Ondoe, 1967

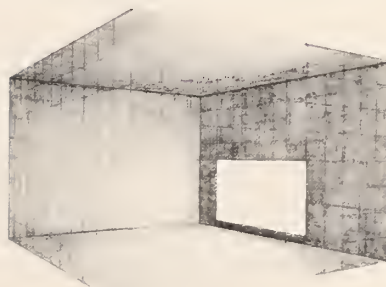


Ashby, 1967

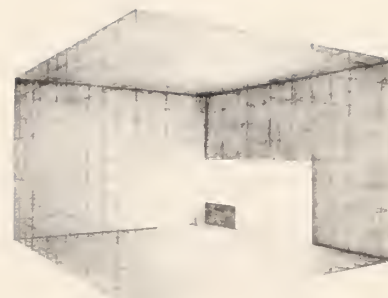
Single Wall Projection Pieces



Prado, 1967



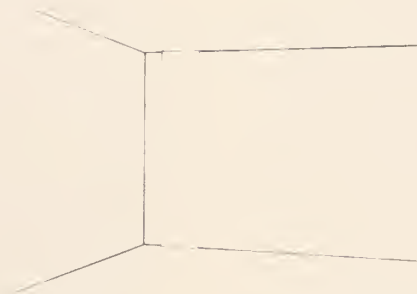
Phantom, 1967



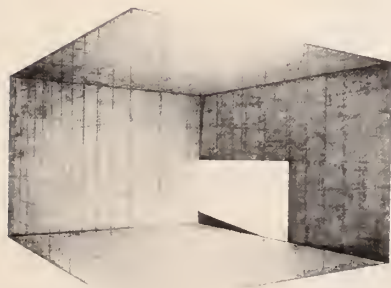
Porter-Powell, 1967



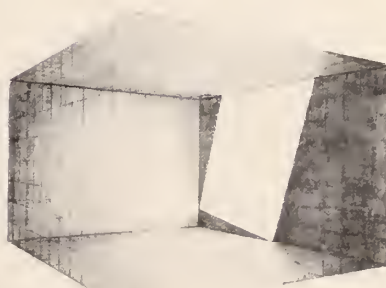
Joecar, 1967



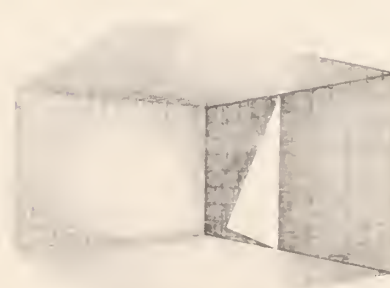
Artar, 1967



Jones-Jones, 1967



Decker, 1967



Pullen, 1967

Shallow Space Constructions

The next group of pieces, the Shallow Space Constructions of 1968 and 1969, developed out of the single wall projections but dealt to a greater extent with the architecture of the space occupied by the viewer. The first of these works related directly in form to the Projection Pieces, except that the space dealt with was not hypothetical but actual. This was done by constructing a partition wall at various distances in front of an end wall of a room, with cuts through the constructed wall. Fluorescent light behind these partitions flooded the opening behind the partition wall. In many ways, the actual space dealt with looked flat from a distance, alluding to two dimensions with a sense of closure at the plane of the front of the partition wall. In *Ronin*, the shallow space equivalent of the projection *Tollyn*, the constructed wall abutted the existing wall, floor and ceiling at one end of the room with the exception of one wall, thereby creating an actual vertical space filled by light.

In other pieces of this series, light emanates from behind the partition on more than one side, seeming to visually cause the partition to float, or turn inward or outward. Rooms were made in which more than one wall of the space was activated. In some pieces, all four vertical walls were worked, and in others, the floor and the ceiling. Like the Projection Pieces, these play with the viewer's perception of space, but they reverse the illusion that occurred in the Projection series: in the Shallow Space Constructions, the lighted actual space in three dimensions alludes to two, and the space activated is the space outside that which is directly lighted. The dimensionality of the physical limits of the space and the glow of the reflected light that permeates the entire room make the illusionistically worked, hypothetical space one with the room space.

Ronin, 1968
Fluorescent light
Collection of the artist





Raemar, 1969
Fluorescent light
Collection of the artist



Rondo, 1969
Fluorescent light
Collection of the artist



Hallwedge, 1969
Fluorescent light
Collection of the artist

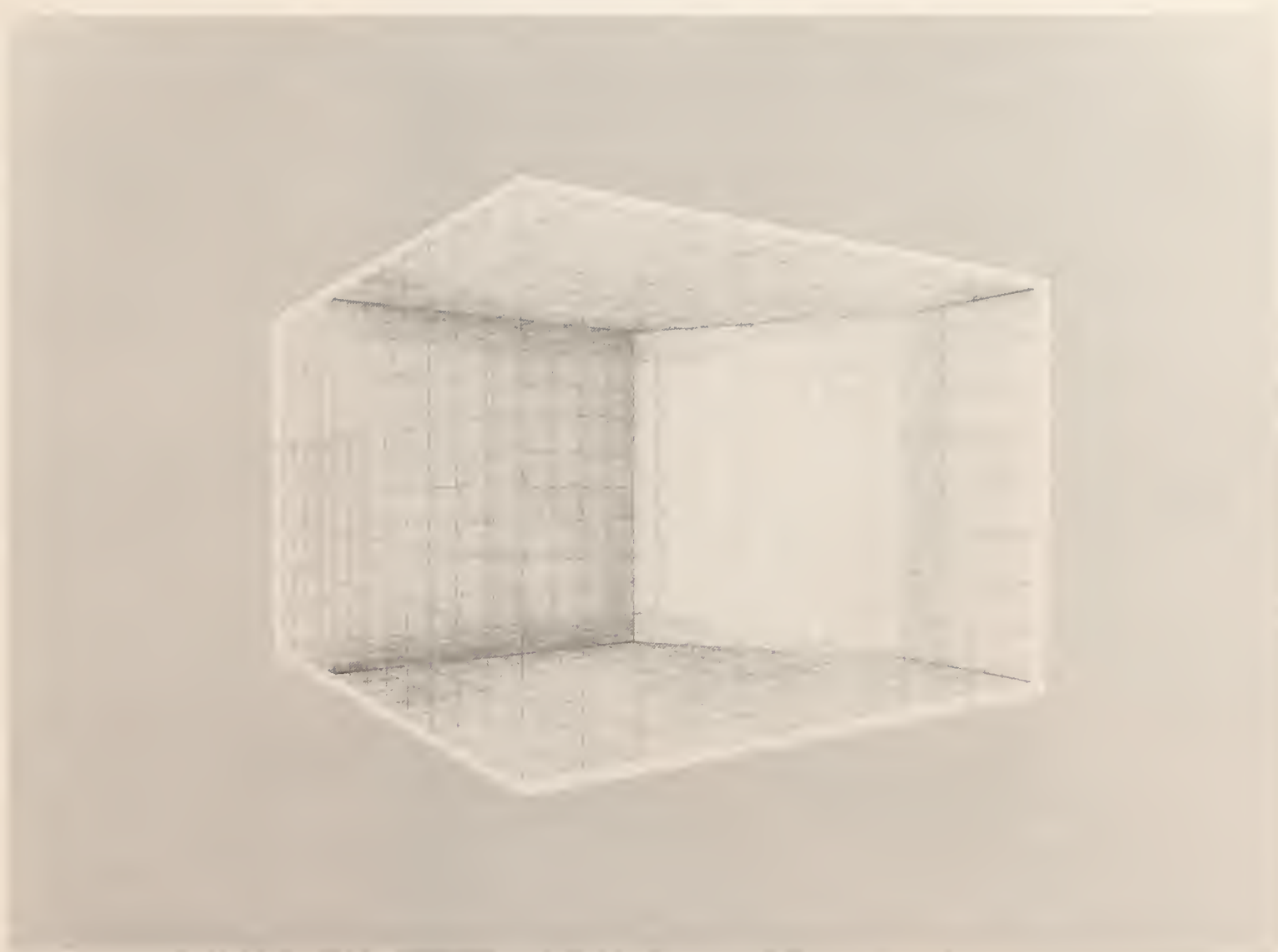
Wedgework Series

The spatial manipulations of the Shallow Space Constructions were extended by moving the constructed wall further out into the room. By angling the non-abutted edge of the partition wall and positioning the fluorescent source at an angle to the end of the wall, the image of the light that shone from one side of the partition created a transparent screen which stretched from the edge of the partition to the point where the image lay along the side wall. The first piece of this series was *Lodi*, which related directly to *Joecar* of the Projection Pieces. The next piece made was called *Hallwedge*, first made in a space cut away from under the stairs leading to the basement in the Ocean Park studio. A piece similar to this was realized in a hallway at the Stedelijk Museum in Amsterdam. Further

pieces in this series were created by shortening the partition and moving it toward the center of the room. In the final piece of the series, the partition is positioned equidistant between the two end walls and the light screen diagonally bisects the remaining half of the room. This screen is perceived as a transparent, filmy, glassy surface through which one looks into a space that appears white. The sheet of white itself reveals various color differentiations from its edges inward, depending on the mix of light behind the partition wall. The colors seem to ride on the surface, out in space and not in the space behind; that space is seen as white, made up of the mix of color.



Wedgework 3, 1969
Fluorescent light
Collection of the artist



Wedgework 2, 1969



Mendota Stoppages
Photograph from the third night piece

Mendota Stoppages

In late 1968 and early 1969, a work began which used the full dimensionality of the space occupied by the viewer and its relationship to actual space outside it. The Ocean Park studio had been entirely closed off to outside light and all its ceiling, floor and wall surfaces perfectly prepared for making the pieces shown in the 1967 Pasadena exhibition. While this space was well suited to the Projection Pieces and the few wall construction pieces realized, it lacked the freshness that comes from an openness to the outside.

Areas of paint were removed from the large windows and the walls were removed to open the studio onto the surroundings, the corner of Main and Hill streets. This allowed bright areas of sunlight to enter the studio space during the day. At night, light from many sources in the urban landscape entered the space. The light that entered was both disconcerting and powerful; its relationship to the space of the studio had no form and made little sense. But the presence of the light itself, and its direct involvement with events occurring in the space outside, was intriguing. Working the openings onto the space outside, and altering the studio limits to accept the light coming through the openings, resulted in an interior space that was generated by its relation to light in the space outside of it.

This working with light from an outside space resulted in a piece entitled *Mendota Stoppages*. The piece had both

a day and a night aspect. The spaces generated in this piece were made by what light events took place in the space outside the studio, how the light from these events was allowed to enter through various opening and closing apertures, and how the walls, floor and ceiling were positioned to accept the light from these events. The day aspect of the work consisted of two pieces created by apertures opened into the space nearest the street. One piece was made for the winter side of the equinox and the other for the summer side. The night aspect consisted of ten pieces created not only by apertures opened into the space nearest the street, but also by apertures opened through a doorway into an adjoining space. The viewing of the night aspect took from two to four hours. During this time, different apertures were opened and the participants moved to various positions within the rooms.

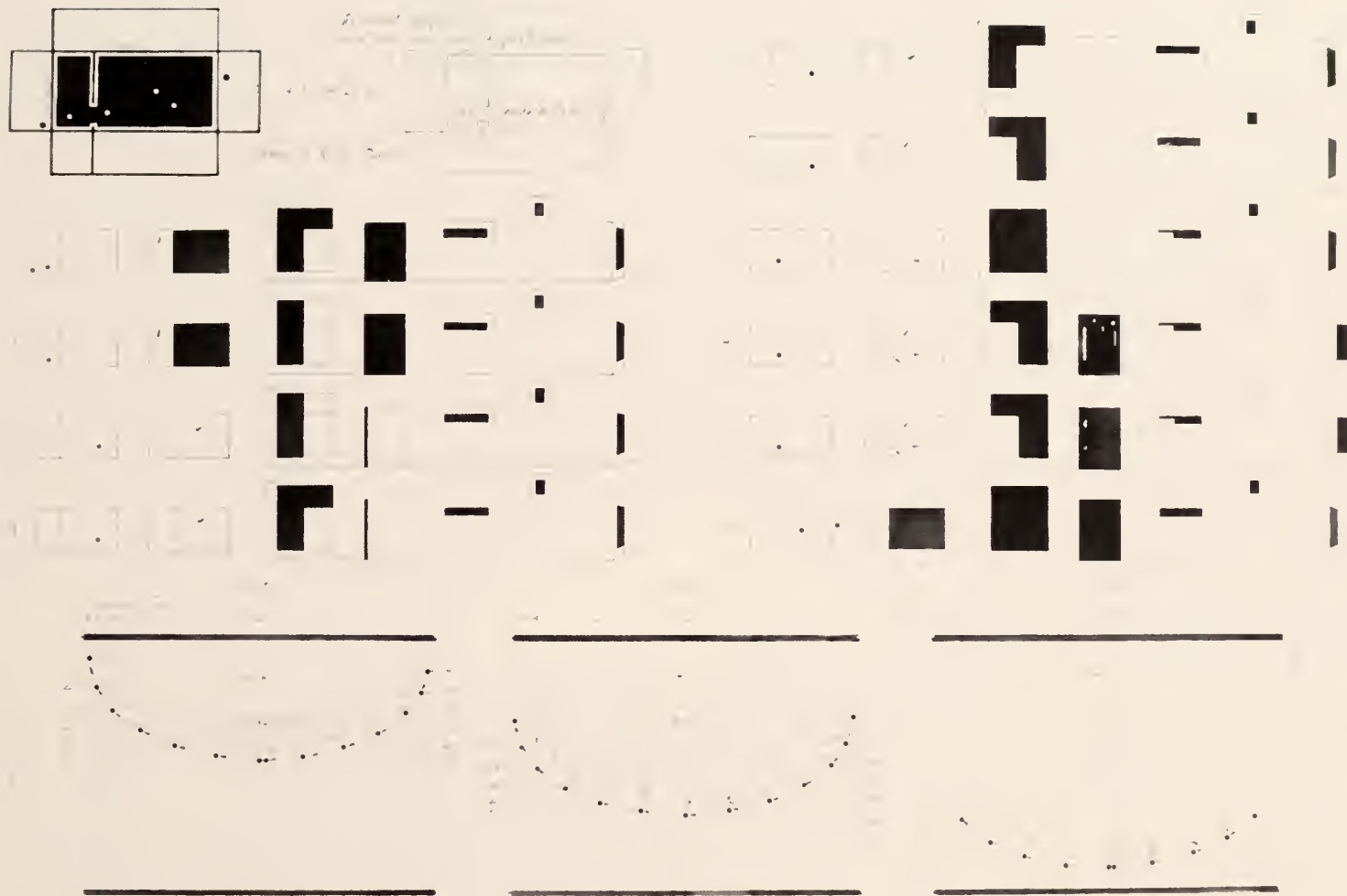
The drawing *Music for the Mendota*, 1970–71, shows the progression of the ten night spaces and the two day spaces for either side of the equinox as they existed in 1970. Each of the night spaces is represented by a series of figures in one of ten numbered lines in the upper portion of the drawing. The first figure on the left depicts the position of the participants in the two spaces. The second figure indicates the direction from which light enters the space and the area into which it goes. The remaining group of figures depicts the positions of the stoppages or apertures which create that particular piece within the

night aspect. Each of the two pieces of the day aspect is represented by the sun angles from summer extreme on the left, through equinox, to winter extreme on the right. For the summer side of equinox, one aperture in the near street space is used while another aperture is used for the winter side.

In appearance, the day aspect of the piece closely resembled the Projection Pieces in that simple forms of brilliant light were imaged on the wall and floor surfaces. The position and shape of these imaged forms slowly changed throughout the day and throughout the year. The change in shape and position of the image altered the spatial qualities of the interior space. The night aspect of the work had a greater range of variability than the day aspect. Each of the ten pieces in the night aspect used both stationary and moving sources of light. The earlier-seen pieces had a predominance of moving sources, whereas the later ones used almost none. The earlier-seen pieces also looked out onto larger amounts of outside space and thereby contained more light. The lower light levels in the later pieces used the increased adaptation of the eyes to dark, which allowed for greater color subtlety and increased the possibilities involved in spatial illusion.

Due to this, the perceived confines of the space were in no way congruent with the physical confines of the room. Also, in proceeding from the first to the last night piece, time spent with each piece increased because of the many visual qualities generated by afterimage effects with prolonged viewing in low light conditions. In the last two pieces, the light quality in the space was physically felt and had a continuity with those spaces generated by merely closing your eyes.

The *Mendota Stoppages* was significant because it was the first site-specific "sensing space"—a space that responds to a space outside with a logic or consciousness formed by its look into that space. Also, the visual qualities within such spaces—their density, grain, tone, sense of surface, and where vision lost its distinction of being "out there" and "in here"—were explored. The dissolution of the line between the "out there" and "in here" was analogous to entering the dream in the conscious, awake state. Through the Mendota, the work became seen as making spaces in which you looked into the dream, spaces in which you were in the dream looking out, and spaces in which you were completely immersed in the dream.



Music for the Mendota, 1970-71
 Ink and pencil on paper, 63 x 83 cm (24¾ x 32¾")
 Private collection



Lunette, 1975
Skylight and interior ambient light
Collection of Giuseppe Panza di Biumo, Varese, Italy

Structural Cuts & Skyspaces

Structural Cuts

After having cut through to the space outside in the *Mendota Stoppages* to let light come through, it seemed obvious to deal with this actual space outside and its relation to the interior space when looking through the opening to the outside. The Structural Cuts is a series of works in which much of the thought and impetus came from the Mendota. However, the form of the cuts and the relationship of the actual space outside to the interior space were done in a way that related closely to the form of the Projection Pieces and the Shallow Space Constructions. In the Structural Cuts, openings are made in the vertical wall surface to a space beyond in such a manner that there is no thickness or dimensionality at the cut. Here, the front surface of the space outside is drawn up to the same plane as the wall that is cut. The degree of transparency of the front surface and the color and grain in the space outside depend on the light quality of the interior space in relation to the light quality of the sky space looked onto.

The first of these pieces was realized in the front space of the studio in Ocean Park, and was a small model for a larger space realized at Villa Panza in Varese, Italy.

Skyspaces

The first piece of the Skyspace series was also done in model form in the Ocean Park studio and, like the first

Structural Cut, its full-size realization was done at Villa Panza. The Skyspaces are, basically, Structural Cuts that are completely above the horizon line. All the Skyspaces are through ceiling and roof, though the roof may be slanted. These pieces deal with the juncture of the interior space and the space outside by bringing the space of the sky down to the plane of the ceiling. They create a space that is completely open to the sky, yet seems enclosed. The sense of closure at the juncture appears to be a glassy film stretched across the opening, with an indefinable space beyond this transparency that changes with sky conditions and sun angles. The Skyspaces have both a day and a night aspect, and the greatest change over time is noticed at the juncture of day and night. Vision into the sky in twilight seems nearly impossible, since the opening appears as an opaquely painted surface on the ceiling. Some of the Skyspaces are made so that the amount of light in them at night is just enough to obscure vision of the stars. This is similar to when local city light at night illuminates the atmosphere and obscures the stars, or perhaps more closely analogous to the daytime lighting of the atmosphere which allows vision of no star save our own. The result of this lighting of the near, interior space is an extreme, soft blackness at the opening. Other versions of the Skyspace series are not lit as much at night and allow varying degrees of vision through our atmosphere.



Avaar, 1976
Ambient light
Collection of the artist

Space Division Constructions

The Space Division Constructions first shown in 1976 also developed out of ideas in the *Mendota Stoppages*. Some of their impetus also derived from the fact that it is not possible in all cases to open up a room onto the space outside. In such a case, the room itself is then divided in two, one half to be the sensing space, the other to be the space looked out onto. These pieces are similar to the Wedgework pieces in that a partition wall is made in the room and the two resulting spaces are more equal in size. The pieces also share a similarity with the Skyspace series in their sense of closure at the plane of the wall. However, the Space Division Constructions are all horizontal.

The room outside the sensing space is lit by direct light on the walls in such a way that no direct light enters the sensing space. The light in the sensing space is ambient light that comes totally from light reflected off the walls in the room outside. You are then viewing the piece from a space that is directly lit, looking into a space filled with ambient light. From a distance, the junction between the two spaces is seen only as surface and resembles a rectangle painted on the wall. The shallower pieces in the series are more open and from a distance this front surface will seem to have a slight sheen and a very tight grain. Advancing toward the sensing space, the opaque surface will slowly yield, become transparent and open out to reveal another room. The quality of light in this other

room is very homogeneous and appears as a green-gray to blue-gray mist. However, the transparent surface holds in its strength, so that even on approach there seems to be a glassy, transparent skin that is looked through. The surface seems physically tangible, and the space has a quality of having “gelled up.” This quality occurs when the color tone is most appropriate for the spatial sizing. The tone of the light comes totally from the space outside of it, and the space itself is painted a pure titanium white. This is done to make the space totally reflective of the light tone which enters it. The space must be painted white, for if the walls are painted any color, the color seems to ride on the walls and not in the air. However, if the space is painted white, and the color arrives as ambient light from the space outside, then the color will seem to ride on the grain seen in the sensing space.

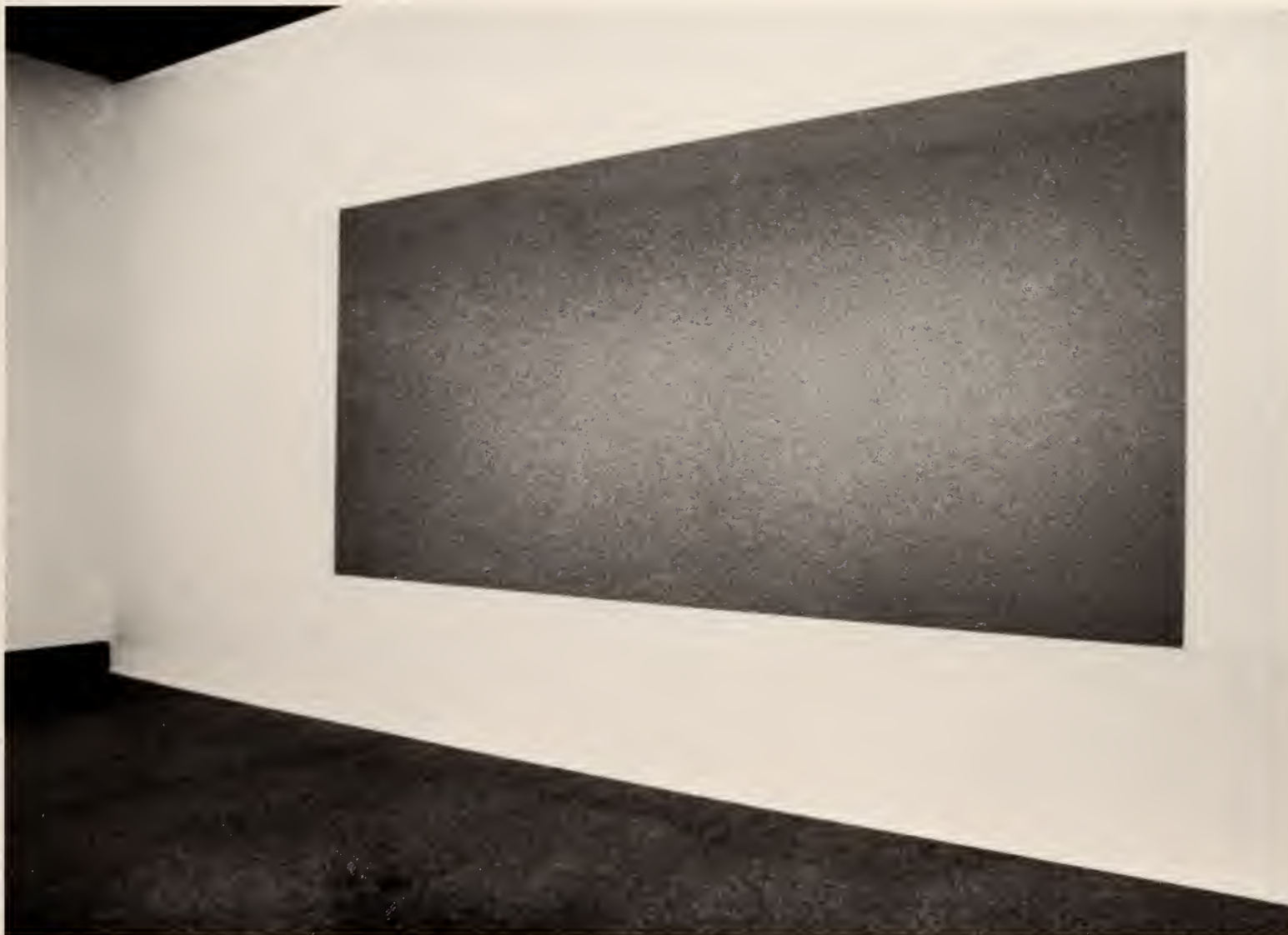
Each piece in the series has a different depth and size of opening, and the spaces are plumbed differently, according to the position of the viewer outside the sensing space. This is like looking into a space that is actually looking into the space you are in. The quality of looking-at-the-space-looking-at-you results in an understanding of the aspects of the light qualities that surround you. These aspects are more clearly objectified in the sensing space, by virtue of the contrast of the directly lit space you are in and the ambient space you are looking into being heightened at the juncture between the two.

Like most of the other works, these pieces are highly sensitive to your position, and on approach tend to dissolve to reveal their existence. This is like looking behind the stage to find the mirrors, only to discover there are none. Here the quality of illusion that is utilized really seems to be more one of materialization, and the *koan* that is posed is most easily understood not by seeing the piece as first one thing and then another, but by seeing the piece open to yield its other aspects through moving in the space outside it. The power of the physical presence and tangibility of the light-filled space and its changing sense of existence tend to make it feel like the dream that coexists with the awake state.

Ganzfeld Pieces

The works in which the viewer stands in the space that is completely filled with homogeneous light are called the Ganzfeld Pieces. In these pieces, the room you are in has a surface which is as completely homogeneous as possible in its light quality. Depending on the depth of the physical space, the hue and saturation of the color, and the scale of light intensity, the air in the space will seem physically charged with colored light and seem to come right up against your eyes.

The pieces in this series are somewhat similar to the Space Division Constructions in that they are sensing spaces where the light comes from outside, the difference being that the viewer is now in the sensing space. Sometimes these pieces are arranged sequentially so that you can walk from one space into another. The first grouping of this sort was *The City of Arhirit*, a series of four spaces realized at the Stedelijk Museum in Amsterdam. Each room was lit by outside light that entered through a small window behind the viewer. The light was controlled in passing through this window so as to create a homogeneous field of pale color in each of the rooms. Because the light outside determined the quality of light in the rooms, the interior light varied according to the time of day, the day of the year, and the atmospheric conditions. Not only did the intensity in each of the rooms vary with outside light changes (perhaps a cloud passing overhead), but the color itself appeared to be constantly in flux. As in a normal homogeneous field, color begins to fade after a few minutes of viewing. In moving from one space to the next, the retinal afterimage of the previous room was mixed with the color present in the new space.



Avaar, 1976
Ambient light
Collection of the artist



Roden Crater, near Flagstaff, Arizona

Roden Crater Project

The spaces encountered in flight, and the work of the Skyspaces, brought about the desire to work with larger amounts of space and a more curvilinear sense of the space of the sky and its limits. The Skyspaces work with limited amounts of the sky space brought down to and against the rectilinear limits of the interior space. Though they are completely open, the Skyspaces deal with a sense of closure of the interior space at the juncture with the space of the sky. The space of the sky is dealt with in a manner that ranges from flat and opaque to indeterminate and translucent. There is little shaping of the limits within this space, except of those which occur due to atmospheric conditions.

You can note, when standing on an open plain, that the sky is not limitless and has a definable shape and a sense of enclosure, often referred to as celestial vaulting. Then, when lying down, you can note a difference in the sense of shape. Clearly, these limits are malleable. To work with the limits of the space of the sky and its sense of interior sizing, a hemispherically shaped, dished space, about 400 to 1000 feet above a plain, was sought. It was necessary that this space be on a plain so that some preliminary sense of celestial vaulting could be experienced. A crater-shaped space was desired so that it could be formed to effect changes in the perception of the size and shape of the sky. The height above the plain was important, so that the slight quality of concave curvature to

the earth experienced by pilots at low altitudes would increase the sense of celestial vaulting after you emerged from the crater space. A high-altitude site with infrequent cloud cover was also sought, so that the deeper blue of the sky could be utilized to support a close-in sense of celestial vaulting while in the bottom of the crater. Either a solitary cinder cone or a butte would satisfy these requirements.

All the Western states were flown, looking for possible sites. The search itself altered many ideas regarding the piece and also generated ideas for future works. Roden Crater, a volcano on the edge of the Painted Desert, was decided upon. The form of the volcano and its surroundings also changed my thinking about the piece. Obviously, this particular geological feature was selected not only because it met the requirements for the work, but also because the volcano itself is a powerful entity.

Rather than impose a plan upon the landscape, it was decided to work in phase with the surroundings. The site is a volcano, and will remain so. But it will be worked enough so that the desired experience will be heightened and ordered. This could also allow the piece to exist without beginning or end.

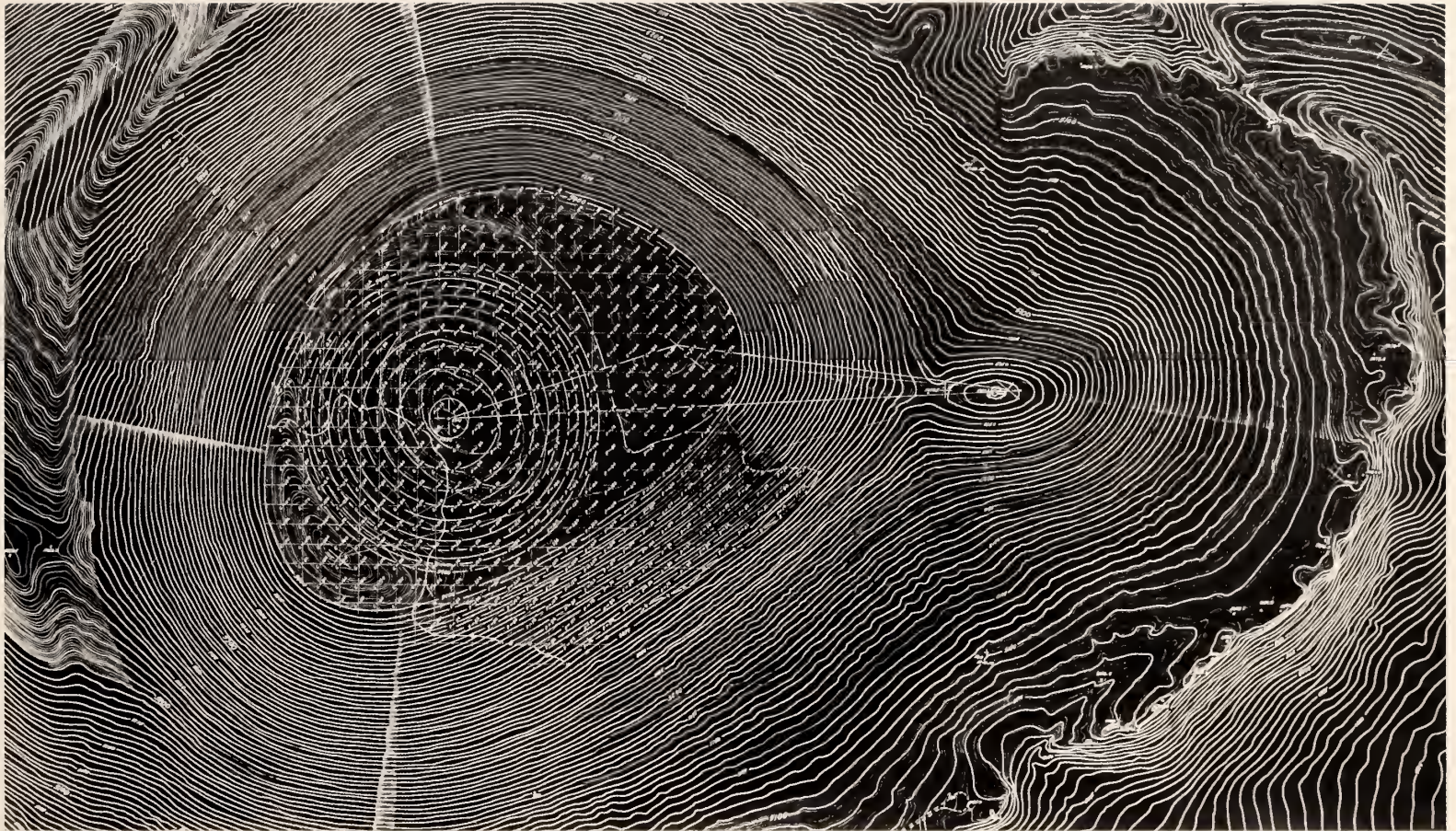
To experience the piece, the site is approached from the west, driving across the flat plain of the Painted Desert. The road makes a half circle on the north side of the crater and comes up a ravine on its northeast side. Walking to

the top of this ravine, you reach a walkway that follows the circular malapai rim of the fumarole on the northeast side of the crater. This level walkway is approximately 250 feet above the plain. Viewing the plain from here gives the first sense of expansion of space. From here, a trail proceeds up the side of the fumarole. The top of the fumarole is approximately 180 feet above the malapai rim, and this change in height also results in expansion of space. In the top of the fumarole will be located several spaces which work with the space of the sky and different events that occur in it. These spaces will also afford some protection for overnight or extended stays at the site. Each of these spaces is in itself a piece, and whenever possible, passage from one space to another is worked so that events in the sky effect changes in the space. The logic is similar to the *Mendota Stoppages*, but in day and night aspects the piece is completely performed by events that occur in the sky. Some of the events that occur in the spaces happen daily, some semiannually, equidistant from the solstices, and others occur very infrequently. In each case, the events produce changes in the spatial qualities. From these spaces on the top of the fumarole, a tunnel proceeds up into the crater. The tunnel extends 1,035 feet and is aligned to capture the southernmost moonset. The shape of the tunnel, a semicircular arch 8½ feet in diameter and 9 feet tall, will allow full vision of the lunar

disc when this alignment is achieved. Proceeding up the tunnel, you will be able to see only sky.

The entrance from the tunnel into the crater space is made through an intermediate space which is similar to the earlier Skyspaces. The space at the top of this chamber creates a sense of flat closure of transparent skin. Steps proceed out of this chamber in such a way that the entrance does not occlude vision of the sky from the tunnel. Passing through the flat, transparent plane, the sense of closure recedes to a curved skin within the larger space of the open sky.

The crater space is formed to support and make malleable the sense of celestial vaulting. This is accomplished by the shaping of the crater, the size of this space, and the height of the new horizon above the normal horizon. Changes in the sense of the shape and size of this interior space are experienced as you move out from the center of the crater and up the inside. This naturally begins to include more of the space outside of the crater than experienced when first entering from the chamber. The rate at which this sense changes is determined by the change in slope. As you proceed up the inside slope toward the rim, the celestial vaulting will no longer attach to the crater rim, but will expand out to the far horizon. The largest amount of space is experienced when you reach the rim of the crater.



Cut-&-fill and tunnel alignment for Roden Crater Project, 1980
Ink and pencil on Mylar, 90 x 180 cm (36 x 72")
Collection of the artist

Chronology

- 1943** James Archie Turrell born in Los Angeles, California, May 6.
- 1961** Graduates from Pasadena High School. In the fall, enters Pomona College; majors in psychology, but begins interest in art.
- 1965** Graduates from Pomona College with a B.A. in Experimental Psychology. Enters a graduate program at the newly founded University of California at Irvine.
- 1966** During the spring, makes his first Projection Piece, *Proto-Afrum*, using a quartz-halogen projector. Leaves the Irvine program to concentrate more fully on his own art. In the fall, takes a studio in the former Mendota Hotel in Ocean Park, California. Continues making Projection Pieces, now using a xenon source.
- 1967** First one-man show, and first museum showing, is organized by John Coplans at the Pasadena Art Museum.
- 1968** During the summer, holds formal exhibition of Projection Pieces in his studio. Begins Shallow Space Constructions—pieces in which light, placed behind constructed walls, has a physical presence which changes the geometry of the room. Receives an artist fellowship grant from the National Endowment for the Arts in the fall. Begins participation in the Art and Technology Program organized by the Los Angeles County Museum of Art; investigates perceptual phenomena in collaboration with Robert Irwin and Dr. Edward Wortz, director of the Life Science Division of Garrett Airesearch, an aerospace company.
- 1969** Makes sky drawings with Sam Francis. During the summer, opens his studio to the public to show the *Mendota Stoppages*, a sequence of pieces using the ambient and direct light from the street and the sun as materials. Learns to fly.
- 1970** During the summer, holds second formal showing of the *Mendota Stoppages* in his studio. Continues these showings by appointment through 1972.
- 1972** Conceives of piece involving celestial vaulting, which results two years later in the beginning of the Roden Crater Project.
- 1973** Teaches at Pomona College as a Visiting Artist. Receives his M.A. from Claremont Graduate School.
- 1974** The Italian collector Count Giuseppe Panza di Biumo commissions six works for his villa in Varese, Italy. Turrell executes his first large-scale Skyspace, which involves cutting an aperture through the ceiling and roof in order to create a visual “skin” of light at the juncture between the interior and exterior space. Receives a Guggenheim fellowship. Finds Roden Crater, a nearly perfect hemisphere, near Flagstaff, Arizona. Is evicted from his studio in Ocean Park.
- 1975** Returns to Varese, and works further on pieces for Panza. Receives an Art in Public Places commission from the National Endowment for the Arts for work on the Roden Crater Project, which is matched by the Dia Art Foundation.
- 1976** One-man exhibition held in the spring at the Stedelijk Museum in Amsterdam. The show includes ten pieces (Projection Pieces, Shallow Space Constructions, mixed interior and exterior light, and daylight), as well as plans for the Roden Crater Project and other drawings. Moves to Sedona, Arizona. Executes first Space Division piece, *Cumo*.

at the Arco Center for Visual Arts in Los Angeles in November. Leases Roden Crater; spends most of his time working on the crater project.

- 1977 Purchases Roden Crater with the support of the Dia Art Foundation.
- 1979 Obtains office facility for the crater project at the Museum of Northern Arizona, Flagstaff. Moves in June to Flagstaff.
- 1980 Receives a grant from the Arizona Commission on the Arts and Humanities. Constructs *Avaar*, a Space Division piece, at the Herron School of Art, Indiana University, Indianapolis.

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